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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/606,108

06/25/2003

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075834.00420

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7590

09/01/2005

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EXAMINER

RENNER, CRAIG A

ART UNIT

PAPER NUMBER

2652

DATE MAILED: 09/01/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/606,108	Applicant(s) OGAWA ET AL.	
	Examiner Craig A. Renner	Art Unit 2652	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 20 June 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,3,5,7,9,11,19 and 20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,3,5,7,9,11,19 and 20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 20 June 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Drawings

1. The drawings were received on 20 June 2005. These drawings are accepted.

Specification

2. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed. the following is suggested:
--MAGNETIC HEAD WITH AUXILIARY MEMBER AND LEADING MAGNETIC CORE
WIDTH EQUAL TO OR SMALLER THAN THAT OF TRAILING MAGNETIC CORE--.
3. The disclosure is objected to because of the following informalities:
 - a. In lines 9 and 13 of claim 1 and lines 11 and 14 of claim 7, each instance of "thereof" should be deleted for better clarity.
 - b. In line 7 of claim 7, "said tape-shaped recording medium" should be changed to --said tape shaped recording medium-- in order to more clearly refer back to that set forth in line 2 of claim 7.
 - c. In line 10 of claim 7, the comma after "including" should be deleted for better clarity.

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d. In line 11 of claim 7, the double comma (i.e., “,,”) should be changed to a single comma for better clarity.

Appropriate correction is required.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 1 and 3 are rejected under 35 U.S.C. 102(b) as being anticipated by Neumann (US 5,973,891).

Neumann teaches a magnetic head assembly (Figs. 2A and 2B, for instance) comprising a magnetic recording head (50), having a leading side and a trailing side (as shown in Figs. 2A and 2B, for instance) relative to the traveling direction of a magnetic recording medium (64), and at least one auxiliary member (lines 24-26 in column 6, for instance, i.e., “wear cap”) adhered to either the leading side or the trailing side of the magnetic recording head (lines 27-30 in column 6, for instance, i.e., the leading side), the magnetic recording head including a substrate (lines 24-26 in column 6, for instance, i.e., “substrate”), a first magnetic core (52) formed above the substrate and having a front end portion thereof, a second magnetic core (62) formed above the

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substrate having a front end portion and a back end portion thereof, the back end portion being connected to the first magnetic core (as shown in Fig. 2A, for instance), a magnetic gap (54) of predetermined thickness provided between the front end portion of the first magnetic core and the front end portion of the second magnetic core (as shown in Fig. 2A, for instance), a coil (58) disposed between the first magnetic core and the second magnetic core (as shown in Fig. 2A, for instance) for developing a magnetic flux between the front end portions of the first and second magnetic cores, wherein a width of the second magnetic core at the front end portion thereof is equal to or smaller than that a width of the first magnetic core (as shown in Fig. 2A, for instance, i.e., smaller), and wherein the second magnetic core is positioned on the leading side of the magnetic recording head (as shown in Figs. 2A and 2B, for instance) [as per claim 1]; wherein a saturation magnetic flux density of a material of the first magnetic core is chosen to be larger than that of the second magnetic core (lines 36-40 in column 6, for instance) [as per claim 3].

6. Claims 1, 3 and 5 are rejected under 35 U.S.C. 102(b) as being anticipated by Chen et al. (US 5,812,350).

Chen teaches a magnetic head assembly (32) comprising a magnetic recording head (includes "WRITE HEAD" portion of 30, for instance), having a leading side and a trailing side relative to the traveling direction of a magnetic recording medium (24), and at least one auxiliary member (G1) adhered to either the leading side or the trailing side of the magnetic recording head (as shown in FIG. 8, for instance), the magnetic

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recording head including a substrate (G2), a first magnetic core (includes 40 and 42, for instance) formed above the substrate and having a front end portion thereof (PT1), a second magnetic core (includes 44, for instance) formed above the substrate having a front end portion (PT2) and a back end portion thereof, the back end portion being connected to the first magnetic core, a magnetic gap (G3) of predetermined thickness provided between the front end portion of the first magnetic core and the front end portion of the second magnetic core (as shown in FIG. 2, for instance), a coil (38) disposed between the first magnetic core and the second magnetic core (as shown in FIG. 2, for instance) for developing a magnetic flux between the front end portions of the first and second magnetic cores, wherein a width of the second magnetic core at the front end portion thereof is equal to or smaller than that a width of the first magnetic core (as shown in FIG. 8, for instance, i.e., equal to), and wherein the second magnetic core is positioned on the leading side of the magnetic recording head (as shown in FIG. 8, for instance) [as per claim 1]; wherein a saturation magnetic flux density of a material of the first magnetic core is chosen to be larger than that of the second magnetic core (as shown in FIG. 10, for instance, i.e., $\text{Ni}_{45}\text{Fe}_{55}$ has a larger saturation magnetic flux density than $\text{Ni}_{80}\text{Fe}_{20}$) [as per claim 3]; and wherein the first magnetic core is made of two or more kinds of stacked films and a saturation magnetic flux density of a material of at least one film of the stacked films closest to the magnetic gap is chosen to be larger than that of the second magnetic core (as shown in FIG. 9, for instance, i.e., $\text{Ni}_{45}\text{Fe}_{55}$ has a larger saturation magnetic flux density than $\text{Ni}_{80}\text{Fe}_{20}$) [as per claim 5].

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7. Claims 1, 7, 19 and 20 are rejected under 35 U.S.C. 102(b) as being anticipated by Drees et al. (US 3,806,902).

Drees teaches a magnetic head assembly (includes 11, for instance) comprising a magnetic recording head (includes B portion of 11, for instance), having a leading side and a trailing side relative to the traveling direction of a magnetic recording medium (lines 12-16 in column 1, for instance), and at least one auxiliary member (22) adhered to either the leading side or the trailing side of the magnetic recording head (as shown in FIG. 3, for instance), the magnetic recording head including a substrate (25), a first magnetic core (one of 27 and 43) formed above the substrate and having a front end portion thereof, a second magnetic core (the other of 27 and 43) formed above the substrate having a front end portion and a back end portion thereof, the back end portion being connected to the first magnetic core (as shown in FIG. 2, for instance), a magnetic gap (20) of predetermined thickness provided between the front end portion of the first magnetic core and the front end portion of the second magnetic core (as shown in FIG. 2, for instance), a coil (41) disposed between the first magnetic core and the second magnetic core (as shown in FIG. 2, for instance) for developing a magnetic flux between the front end portions of the first and second magnetic cores, wherein a width of the second magnetic core at the front end portion thereof is equal to or smaller than that a width of the first magnetic core (as shown in FIG. 3, for instance, i.e., equal to), and wherein the second magnetic core is positioned on the leading side of the magnetic recording head (as shown in FIG. 3, for instance) [as per claim 1]; wherein a first auxiliary member (22) is adhered to the leading side of the magnetic recording head

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and a second auxiliary member (23) is adhered to the trailing side of the magnetic recording head [as per claim 19]; and wherein the magnetic head assembly is a component of a magnetic tape drive unit comprising tape driving means (lines 56-62 in column 2, for instance) [as per claims 7 and 20].

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. Claims 7 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Neumann (US 5,973,891).

Neumann teaches the magnetic head assembly as detailed in paragraph 5, supra, further wherein the magnetic head assembly is a component of a storage device (line 48 in column 7, for instance) wherein the recording medium is tape shaped (lines 61-62 in column 1, for instance). Neumann, however, remains silent as to the storage device further comprising a "tape driving means" as per claims 7 and 9.

Official notice is taken of the fact that a tape driving means is notoriously old and well known in the art for the purpose of increasing storage capacity by enabling information storage/retrieval over an entire length of a recording medium. It would have been obvious to a person having ordinary skill in the art at the time the invention was

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made to have had the storage device of Neumann further comprise a tape driving means. The rationale is as follows:

One of ordinary skill in the art would have been motivated to have had the storage device of Neumann further comprise a tape driving means since such increases storage capacity by enabling information storage/retrieval over an entire length of the recording medium.

10. Claims 7, 9 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chen et al. (US 5,812,350).

Chen teaches the magnetic head assembly as detailed in paragraph 6, supra, further wherein the magnetic head assembly is a component of a storage device (20) comprising a storage medium drive unit (includes 26, for instance) and wherein the recording medium can be alternatively tape shaped (lines 33-35 in column 1, for instance). Chen, however, remains silent as to the storage medium drive unit alternatively comprising a "tape driving means".

Official notice is taken of the fact that a tape driving means is notoriously old and well known in the art for the purpose of increasing storage capacity by enabling information storage/retrieval over an entire length of a tape shaped recording medium. It would have been obvious to a person having ordinary skill in the art at the time the invention was made to have had the storage medium drive unit of Chen alternatively comprise a tape driving means. The rationale is as follows:

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One of ordinary skill in the art would have been motivated to have had the storage medium drive unit of Chen alternatively comprise a tape driving means since such increases storage capacity by enabling information storage/retrieval over an entire length of the tape shaped recording medium.

Pertinent Prior Art

11. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. This includes Sand (US 3,610,839), Braun et al. (US 3,701,859), Schiller (US 4,293,884), and Biskeborn et al. (US 6,646,830), which each individually teaches a magnetic head with leading and trailing auxiliary members and a leading magnetic core width equal to or smaller than that of a trailing magnetic core.

Response to Arguments

12. Applicant's arguments filed 20 June 2005 have been fully considered but they are not persuasive.

The applicant argues "Neumann does not disclose a magnetic recording head assembly including an auxiliary member adhered to the leading or trailing side of a magnetic core." This argument, however, is not found to be persuasive as Neumann does disclose a magnetic recording head assembly including an auxiliary member (lines 24-26 in column 6, for instance, i.e., "wear cap") adhered to the leading or trailing side of a magnetic core (lines 27-30 in column 6, for instance, i.e., the leading side).

The applicant further contends that "Chen does not disclose a magnetic recording head in which the width of said second magnetic core at the front end portion thereof is equal to or smaller than a width of said first magnetic core." This argument, however, is not found to be persuasive as FIG. 8 of Chen shows a magnetic recording head in which a width of a second magnetic core (includes 44, for instance) at a front end portion (PT1) thereof is equal to a width of a first magnetic core (includes 40 and 42, for instance) (emphasis added).

Conclusion

13. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).


A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

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14. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Craig A. Renner whose telephone number is (571) 272-7580. The examiner can normally be reached on Tuesday-Friday 9:00 AM - 7:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hoa T. Nguyen can be reached on (571) 272-7579. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Craig A. Renner
Primary Examiner
Art Unit 2652

CAR